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PRESIDENTIAL ADDRESS

by J. S. DOW, B.Sc., A.C.G.I. *(Fellow)*

(Delivered on October 8th, 1946.)

Before each new President, when he accepts office, there looms the formidable task of finding new and interesting material for his address—a task that becomes more difficult year by year. President after President, in his pomp, "abides his hour or two and goes his way," but he leaves behind him a record of his impressions. As the list of past Presidents lengthens so does the list of unexplored topics contract.

I have been asked to devote this address to a survey of the work of the Society with which I have been so long associated. I do not, however, propose to marshall facts in regard to development, achievements, growth of membership, etc.—a task which was recently undertaken, very ably, by one of my predecessors, Mr. E. Stroud*—but to deal in broad terms with the ideas in the minds of the founders of our Society, to trace the subsequent realisation and development of these ideas, and, so far as one may, to forecast the future.

The fact that lighting is of moment to every single member of the community places illuminating engineering in a special category amongst arts and sciences. It is proposed, therefore, to dwell particularly on the "human element" with which our Society is closely concerned, and to discuss certain related features of our work such as the presentation of the case for good lighting, the appraisal of "quality of lighting" and our relations with other bodies.

The conditions prevailing when the Society was formed, nearly forty years ago, were recalled in Mr. Stroud's address. Light was then relatively expensive, measuring instruments were few and cumbersome, and there was little information on lighting available. Those with any title to describe themselves as experts in illumination were few indeed, and it was necessary to rely largely on the combined efforts of different types of experts, physicists, architects and medical men. The Society thus did not represent yet another effort at specialisation; on the contrary it had a unifying influence by bringing together much scattered information on certain problems hitherto studied as separate items and never properly viewed in relation to one another.

It is well to recall that our Society imposes on its members a double obligation. The very first of the objects of the Society, stated in its Memorandum of Association, is:—

> "to promote the general advancement of illuminating engineering and the utilisation of natural and artificial light, *and* the dissemination of knowledge relating thereto. . . ."

Achievement of this aim implies frequent contact with users, more especially those associated with Government Departments, Local Authorities and important bodies concerned with public utilities, transport and industry, who, if sympathetic, can do much to aid the realisation of our ambitions. Co-opera-

* Trans. Illum. Eng. Soc. (London), 1944, IX. 159.

tion in such cases is achieved much more readily when, instead of approaching such users as outsiders, we can enrol these valuable elements in our own ranks. The clause in our Articles permitting anyone "interested in the objects of the Society" to become a member enables us to do this.

In approaching the user it is well to bear in mind that, besides furnishing him with information, we can often learn much from him in regard to the application of light within his special field. We should be careful to avoid the habit of perpetual admonition, rather inviting his aid as a partner in an inspiring joint enterprise. Patience must, however, often be exercised in order to overcome prejudices and remove misconceptions due, it may be, to lack of imagination or distrust of what is unfamiliar.

Impressions and Misconceptions.

Reluctance to spend is a familiar difficulty encountered in seeking to introduce better lighting. This hesitation is in part a legacy from the methods of propaganda adopted in the early days of fierce competition between gas and electricity, when the reduction of lighting bills was pressed on the consumer as a main incentive. Indeed, the impression was almost given that however indifferent people might be to expenditure in other directions (the purchase of tobacco or alcoholic refreshment for example) they must be alert to save every possible penny of expenditure on lighting.

Experienced illuminating engineers soon learn to attach little importance to declarations that existing lighting installations "give every satisfaction," that "there have been no complaints" or that "there is no desire for change."

Few people have sufficient imagination to visualise something better than they already have. Only actual experience of new and better things can convince that there is anything amiss with the old ones.

Mistrust of the "new-fangled" is of old origin. It is naturally not easy to find any very early references to the introduction of new illuminants, but the following quotation from Trevelyan's "English Social History," complaining of the chimney, aptly illustrates this traditional mistrust of what is new and unfamiliar:—

> "Now have we manie chimnies, and yet our tenderlings complaine of rheumes, catarhe and poses. Then had we none but reredoses (braziers in the centre of the hall), and our heads did never ache. For as the smoke of those daies was supposed to be a sufficient hardning of the timber of the houses so it was reputed to be a far better medecine to keep the good man and his family."

Objections to new illuminants have not infrequently been based on the belief that they emitted some form of noxious emanation, for example ultra-violet rays. Others (more rational) have been due to distaste for increased brilliancy, and others associated with colour. Criticism of the progressive change towards an apparently "whiter" light has sometimes been accompanied by laments for the warm and mellow hues of illuminants of the past.

On this question there appear, however, to be two schools of thought, those who are attached to the warmer hues and who sigh for the candles and oil lamps used by our forefathers and those who believe that the yellow rays are detrimental to vision and that salvation is to be found only in imitation of daylight. (Oddly enough I have met people who apparently held both views simultaneously!) So the controversy goes on ("about it and about"). In the clash of argument and the clamour of debate there may sometimes be heard,

I have been told, a sort of gentle but persistent whistling sound, which has been attributed to the grinding of axes!

The Case for Good Lighting.

It has been said that one of our main objects is the dissemination of information on illumination, keeping the case for good lighting constantly before the minds of the community.

Many of us, I imagine, have conceived a certain distaste for "propaganda," by which we really mean efforts to support a case by specious and plausible argument. There are, it is true, some who imagine that artfulness is the essence of good publicity. I have seen it seriously contended that the most potent advertisements are those written "with the tongue in the cheek." This idea is, in my view, foreign to a good cause and unlikely to aid us in approaching the most enlightened members of the community, to whom, advisedly, our appeal should first be made, and who are best to be moved by evidence of sincerity and good will.

There should be no need for me to dwell upon the familiar arguments in favour of good lighting—its influence in the factory on production, safety, cleanliness and general well-being, its value in promoting comfort in the home, its aid to the salesman in the store, the great part it plays in restaurants and places of entertainment. All these are matters of common knowledge, and they are best illustrated by actual demonstrations for, as one of my predecessors, Mr. Ackerley, has pointed out, "seeing is believing."

There is also ample evidence from the work of Beuttell, Lythgoe, Weston and others in this country of the greater ease of vision and better performance that result from improvements in the level of illumination and the removal of defects in lighting which embarrass and distract the eyes.

But we are on less certain ground when we endeavour to support our theses by statistical data, and we should be scrupulous in making statements presumably based thereon and careful to avoid any impression of "making a case."

Statistical Data.

Such data as are available relate chiefly to three items: production, safety and eyesight. To secure definite and authoritative evidence of improvement in output and quality of work as a result of better lighting is notoriously difficult, owing to the many interlinking factors involved. Yet this has been done, in certain industries, as a result of studies conducted for the Department of Scientific and Industrial Research. I need scarcely remind members that my immediate predecessor, Mr. H. C. Weston, has rendered conspicuous service in this field. Such data may certainly be used with good effect. It may be suggested, however, that in urging these economic advantages, consideration should be given to human nature. Workers may well view with suspicion the introduction of an improved system of lighting if it implies that they will be expected to turn out more work. It is wiser to suggest that the better lighting will enable them to do the same work with less effort, and that it will remove handicaps and help to eliminate errors, for which they might be unjustly blamed.

Similarly, the tracing of the relation between lighting and diminution of accidents in factories presents great difficulty, owing to the many contributory elements. Even when these can be separated from the main issue, it is rarely that we can deduce with certainty that, over a sufficiently prolonged

period, the introduction of better lighting has *per se* diminished the accident rate by so much.

In the field of industry, therefore, we have had to fall back on "inferential" methods, such as those of the Home Office Departmental Committee which, in its first report, established several important conclusions. It showed that accidents, for example, are undoubtedly more frequent in the dark days of winter than in the longer daylight of the summer months; the accident rate, in fact, following very closely the natural variation in daylight throughout the year. It was also shown that the effect was most pronounced for a particular form of accident—that due to persons falling and, therefore, most likely to be influenced by lighting conditions.

Street Safety and Public Lighting.

Data illustrating the benefits of good public lighting would also be very welcome, but in this country they have not proved easy to obtain—I say in this country. It would appear that in the United States they have been more successful in tracing definite reductions in street accidents following the introduction of better lighting and, conversely, observing relapses to more fatalities when, on occasion, the public lighting was curtailed from motives of economy. In England co-operation between the public lighting engineer and the Chief Constable should, and doubtless does, sometimes furnish useful evidence. It is, however, only occasionally that a change in lighting occurs on a sufficient scale to enable clear evidence to be gained. There is also the difficulty—such is human nature—that better lighting does not always lead to fewer accidents. It may, for instance, attract a greater volume of traffic into roads previously little used. It may also, by inspiring confidence at first, encourage drivers to increase speed and to take greater risks, so that the benefit to safety is only experienced at a later stage.

Efforts made to correlate street accidents *directly* with lighting conditions —some made with the sympathetic help of the Ministry of Transport—have, for these reasons, proved disappointing, but in this field, as in industry, it is possible to get useful evidence by inferential methods, e.g., by comparing the accidents occurring at night with those during daylight hours. This ratio has tended to increase year by year, no doubt because of the steady growth in night traffic. In 1933 the ratio was 0.55, i.e., about half as many people were killed at night as during the daytime. Already the proportion appeared unduly high, considering the fact that so few pedestrians use the roads after darkness has fallen.

The sudden imposition of the black-out, with the outbreak of war in 1939, afforded a unique opportunity of extending previous inquiries. Would the night accident rate continue to rise in spite of the fact that certainly no people would habitually use the streets by night unless duty compelled them to do so? Experience verified this expectation. Actually in 1939-1940 the number of pedestrians killed during hours of darkness was more than *three times* those killed during daylight. The position was illustrated in a chart prepared for me by Mr. Ives for the Convention Exhibition comparing the accident record month by month during the first complete year of war (1939-1940) with that during the last year of peace (1938-1939). Not only do the accident figures during the dark winter months rise to record figures, but the very nature of the curve alters.

Another chart, also based on data published by the Royal Society for the Prevention of Accidents proved even more interesting. It showed how accidents to pedestrians invariably rose to a peak in the dark periods when there

was no moon and diminished to a minimum when the full moon appeared. Experience during the second world war was, however, not unlike that during 1914-1918. In both cases the first effect of the black-out was to produce an alarming increase in street accidents; but in both cases, as people became in some degree habituated to the novel conditions, fatalities became less, though still abnormally high as compared with those under normal conditions.

Illumination and Eyesight.

When we come to statistical data relating to eyesight we are on very uncertain ground indeed. It is still occasionally stated that the eyesight of the nations is progressively deteriorating and it is sometimes inferred that this is due to the extending use of artificial light. There is, I believe, no valid evidence for this statement, and I have yet to find an ophthalmic surgeon of standing who subscribes to either belief. It is also inexpedient to follow too closely the argument that our eyes have been adapted through long ages to the use of natural light—which varies so enormously, both in intensity and in quality, with the locality, the period of day, and the season.

We ourselves, however, would do well not to speak loosely of "workers having their eyesight ruined in factories" owing to poor lighting or to draw similar inferences in regard to children in schools. The Home Office Departmental Committee on Lighting in Factories from 1913 onwards has sought in vain for such evidence in connection with industrial lighting. In regard to school-children, not only is it exceedingly difficult to trace a definite relation between lighting conditions and the alleged deterioration in eyesight during school life, but there are ophthalmic experts of standing who doubt whether any real deterioration exists.

All this, of course, does not imply that continuous work by inadequate lighting, either natural or artificial, can be other than harmful because of the increased effort that it imposes—but that we should be cautious in making assertions and diligent in collecting statistical data which we at present lack.

The Appraisal of "Quality" of Lighting.

Having thus discussed at some length evidence in favour of good lighting, let us turn to what is for us a very vital and fundamental problem, the definition of lighting requirements and the appraisal of "quality" of lighting.

It was perhaps an inevitable result of the economic conditions prevailing at the beginning of the twentieth century that lighting experts were at first interested almost exclusively in *the available illumination*—and in general only the illumination on the so-called "working plane." When light was so scarce and expensive this was perhaps a natural tendency, but it exposed illuminating engineers to some justified criticism which was once tersely crystallised in the charge that they seemed to suffer from "foot and candle disease"! The first I.E.S. Code (1936), as its original title, "Recommended Values of Illumination," declared, was concerned only with this factor. The latest (1945) version marks a definite advance in three respects: (a) it furnishes a scientific background to the values of illumination specified; (b) it deals for the first time with natural lighting; and (c) it attempts in some measure to define "quality" of lighting. In doing so it follows methods resembling those of the Home Office Departmental Committee on Factory Lighting, which discriminated

between "sufficiency" and "adequacy"—though it had some difficulty in defining the latter.

It is often asserted, as an axiom, that "the eye is the final judge of an installation"—though it might perhaps be more logical to probe further and to recognise that mental impressions, based not only on the image received by the eye and telegraphed to the brain but on previous experience and associations, have really the final say.

The brightness that we actually see may be something different from that determined by readings of a photometer. Most of us could recall circumstances in which, as we say, "the eye was deceived" into judging the illumination to be higher or lower than it actually was—though strictly speaking it is not the eye so much as our method of measurement that is really at fault.

Similarly, in regard to appraisal of glare, physiologists have never been able to furnish us with any ready means of determining when the eye begins to be troubled by excessive brightness. We are obliged, therefore, to fall back upon empirical rules, such as those limiting brightness and contrast.

The Value of Contrast.

It will be observed that in this connection also the new I.E.S. Code achieves a better allowance for actual experience as the permissible brightness of light sources is arranged on a sliding scale, increasing as the illumination increases. A similar gradation applies to the limiting ratio between local illumination on the work and general supplementary illumination in the background which ranges from 5 : 1 to 30 : 1 according to the illumination provided.

This recognition of the importance of contrast is vital and goes to the root of illuminating engineering. It has been well said that the illuminating engineer of the future might better be described as a "brightness engineer" for on the comparative brightness of object and background depends the ease with which things can be seen and the quality of "visibility" so difficult to define but so important in almost all fields of illuminating engineering.

All illuminating engineers should be familiar with the graph presented in Lythgoe's paper before this Society,* from which one very important inference may be drawn—namely that for all operations involving perception of light and shade (which is characteristic of the great majority of industrial and other processes), the immediate background to the object viewed should be somewhat less bright than the object, but not much less and in no case greater. It appears that for ordinary levels of illumination the ideal condition is found when the brightness of the background is approximately one quarter of that of the object, e.g., with an object brightness of 12 equivalent foot-candles the background brightness should preferably be of the order of three foot-candles. In order to apply this principle the illuminating engineer must necessarily bear in mind the reflecting power of object and surroundings. He must, if he is to serve as a brightness engineer, consider, the scheme of decoration and arrange his distribution of illumination accordingly.

Much might be written on the application of this principle and on brightness design generally, but two illustrations may serve. At meetings of the Society the view has often been expressed that the practice of showing films in a completely darkened auditorium is fundamentally wrong. The contrast is far too great for comfortable vision. In spite of advances in illuminants which make possible screens very much brighter than those available in the

* Trans. Illum. Eng. Soc. (London), 1936, I, 5.

past, the practice of showing films in almost complete obscurity still persists. Public taste is sometimes said to be responsible but it may be suspected that in this case, as in others, entertainers are apt to confuse the tastes and preferences of the public with their own predilections.

My second illustration relates to the practice of prescribing high general illumination and light-coloured walls irrespective of the purpose to which rooms are put. If the materials worked upon are dark in tint this method may well result in the actual brightness of this material being very much less than that of the surroundings—a condition of "reversed contrast" shown by Lythgoe's diagram to be manifestly wrong. A similar condition is found in natural lighting when objects are seen with a bright window as a background. Attention has been drawn to the merits of windows having deep reveals, which relieve the contrast between the brightness of the window and that of the adjacent walls.

There are, of course, also many cases in which the principle just discussed need not be applied—for example, when we are not concerned with the perception of light and shade but only with outline or silhouette, in which case the background may well be very much brighter than the object.

We should also remember that whilst the distinctness of objects is often a main consideration it is not necessarily the only one. In the case of illuminated signs, for example, the first object is to provide conditions of brightness to ensure legibility. But linked to this is a second requirement, sometimes almost equally important—namely, that of *arresting attention.*

If we desire to stimulate, to attract, or even to startle, a brightness ratio far beyond that expedient from the standpoint of visibility pure and simple may be expedient. Even in lighting installations we should not be too dogmatic in imposing limits of brightness. When the eye is constantly engaged on some serious task and is constantly directed in a given direction, as in the schoolroom, avoidance of possible glare is a prime consideration. But in places of entertainment and in our own homes we may show greater latitude. To many people a certain degree of sparkle is stimulating. Extreme preoccupation with the avoidance of glare may result in conditions which seem hygienically desirable but are in fact definitely dull.

In modern lighting installations the colour of the background as well as its brightness may play a conspicuous part. This topic, which can only be touched upon in this address, might well form the subject of a paper before the Society. It is singular that so little guidance is available in regard to the choice of colour, for instance, in industrial installations. It may perhaps be suggested that one should avoid splashes of crude and vivid colour and, in general, adopt mixed tints, not too brilliant in tone, choosing for the main scheme of decoration harmonious tints which are approximately complementary. In this field, again, the object in view should be considered—whether we are to aim at a striking effect creating a momentary sensation, or to furnish a more tranquil picture with which we are prepared to live day after day and to contemplate with enduring satisfaction.

Standardisation.

Of late years there has been a growing tendency towards standardisation of technique and the framing of codes of rules governing lighting practice. Such provisions are excellent up to a point. But it should be realised that no rule ought to be invariably observed and no general statement is universally true.

How often do lighting schemes require modification because of conflict

with some quite different requirement, associated with such matters as heating, ventilation, air conditioning or structural design. We should all realise how little rules can do to secure that sense of satisfaction which is the hallmark of successful design and how imperfectly they may express many factors on which our happiness and enjoyment depend.

In no field is this more evident than in natural lighting. It has been remarked that the I.E.S. Code, whilst dealing fairly fully with "quality" in artificial lighting, does not venture to deal with natural lighting in the same way. To define quality in natural lighting is indeed a difficult problem dependent as it is on the dimensions of rooms, their architectural features and the decoration. Some indication of the conditions to be sought was given in "The Lighting of Buildings" (Post-War Building Studies No. 12), in which attention was drawn to the pleasant effect of Georgian and some mediaeval buildings, notwithstanding the fact that they were not always generously lighted.

The Appeal of Light.

A statement of the proportion of outdoor daylight entering a room is doubtless most valuable, and yet it expresses little of what we feel about daylight and what we gain from it. In my own library, where much of this address was written, the daylight factor must surely be disgraceful low, for the natural north outlook of this room is overshadowed by trees in the roadway which the local authorities have neglected to prune, and by flowering shrubs in the garden which have been allowed to become somewhat overgrown. Yet the changing nature of the daylight that filters into this room is a constant pleasure. Light filtering through green and amber foliage imparts a mellow tone modifying the natural spectrum of daylight. Sunshine reflected from the flowering rhododendrons adds a roseate hue to the light which has often been the subject of admiration and comment.

Recollection of such experiences makes one wonder at the outlook of those who regard windows merely as an opening through which daylight can enter and enable us to do our daily work. It has even been suggested that we dispense with windows and rely exclusively on artificial light, so much more uniform and so much more completely under our control. Such advocates surely ignore one of the most important qualities of windows, which serve not only to let the light in but to allow us to look out!

So it is with artificial lighting. When all such requirements as those set out in the I.E.S. Code have been satisfied there remains the question of the "fitness" of the installation for the purpose in view. The pressure of war led inevitably to standardisation and the adoption of mass production methods of industrial lighting. Yet actually almost every factory presents its own problems, only to be solved by special treatment and after consultation with those having practical experience of the processes to be illuminated. Furthermore, as Mr. H. C. Weston has recently pointed out, industrial lighting has always a double function to fulfil—to enable the task to be done with ease and also to create an atmosphere in which the mind is content and there is a general sense of well-being.

All this applies even more to the lighting of public buildings, stores, restaurants and places of entertainment, where individual taste plays such an important role and the "effect" or "appeal" and the giving of pleasure is a dominant consideration. Lighting that is flawless according to conventional precepts may fail in its purpose. I have in mind, for example, hotels in which

the latest modern fittings are installed, where the illumination is ample and rules in regard to avoidance of glare, etc., are satisfied. Nevertheless, one has a sense of chill desolation in these large and lofty rooms, with the glitter of stainless steel and shining glass overhead and the high and even illumination spread over the entire room, without pity or restraint. The personal touch is missing and the note of welcome is absent.

This aspect of lighting, which is associated with the art rather than the science of illumination, seems to have been somewhat neglected by our Society and has not often figured in our Transactions.

Even in the singular age in which we are now living, managers of restaurants do not offer their customers "scientifically designed meals of ingredients blended in accordance with the latest scientific principles." Yet firms in the lighting industry habitually take pride in describing themselves as the pioneers of scientific illumination and the like, but rarely profess to offer lighting that gives pleasure to the eye.

In this period of economy we have got to do the best we can. But this is, we hope, a passing phase. It should be succeeded by one in which more thought will be given to the use of light as an amenity, in adding to our comfort and sense of well-being, to the pleasure of our homes and the beauty of our cities. The whole trend of development in illuminants is in this direction—the great gain not only in the efficiency of illuminants but in proficiency in furnishing coloured light. The possibilities of fluorescence for purposes of decoration and display have scarcely been explored as yet. The illuminating engineer in the future may be quite as much concerned with the development of luminous objects, for decoration, emphasis or the giving of information, as with the provision of illumination *per se*.

He may also come to set a somewhat higher value on the *appearance* of fittings in general use. It has often been remarked that throughout the long periods of so-called dark ages the efficiency of primitive oil lamps remained almost unaltered, yet many of them were of exquisite design and of perfect proportions so that they remain things of beauty even to-day. Will our fittings of to-day be so regarded by posterity? If one considers the effect of that marvellous invention, the fluorescent lamp, when boxed in trough reflectors and mounted in rows at a relatively low level, one must, I think, concede that there is a certain falling away from the aesthetic standards of the past.

On these and many other points we need the influence of artists, architects and craftsmen. It is to be hoped that interchange of ideas and comparisons of values with other bodies—such as those so happily initiated in our joint gatherings with the R.I.B.A.—will have a useful educational influence.

The Future of the Society.

I come now to the final section of this address in which some effort is made to envisage the future of the Society. It will have been gathered that I conceive this to be on a broad basis. The Society should make efforts to draw into its ranks men of light and leading in all kindred professions, without attaching too much weight to their knowledge of illuminating engineering. It should also seek co-operation with other bodies in every possible way. We should be alert to seize opportunities of working with others on joint committees. We should not be afraid of tackling subjects that may seem to be a little off our normal track. I have in mind, as an instance, a Joint Committee on Eyestrain in Cinemas, once set up at the request of the London County Council, on which a great variety of experts joined forces with our own members. This Committee

did excellent work of service to the community and of definite educational value to the experts who served on it—and it brought to the coffers of the Society a donation of 50 guineas.

The existence of Centres distributed throughout the country offers an excellent opportunity for getting in touch with local authorities, universities and other bodies. Some of our Centres have been very successful in this respect.

We should welcome also the growing tendency for Government Departments to interest themselves in lighting, helping them so far as we can by our expert knowledge and by recognising the powerful aid which their intervention can lend to better lighting by raising its prestige in the eyes of the public.

Our Society, by the intention of its founders and by the terms of its Articles, is a "cultural" Society. The term has sometimes been quoted with derision, yet it is, in fact, the highest description that a Society can covet. For it signifies that it exists to carry out ideals, to acquire knowledge and spread it for the benefit of mankind, and not primarily for the personal benefit of its members—although naturally all those who share in its work do inevitably gain thereby. Our Society has sometimes been likened to the Royal Society of Arts, which took a sympathetic interest in our progress and in whose hall many of our early meetings were held. There is, as I shall show shortly, another body with whom we have also much in common, and from whose experience we may possibly profit.

We have every reason to be gratified by the gain in membership, the extending influence and the growing prestige of the Society during recent years. To what is this gain mainly due? I believe that the one element which has contributed more than any other is the recognition of the *disinterestedness* of the Society, of the independent and impartial platform that it provides and of its determination to deal honestly and impartially with any problem that may be presented to it.

Now, what is it mainly that contributes to this position of impartiality and independence?

There is, firstly, the fact that anyone interested in lighting is free to join the Society, that we include amongst our members not only the greatest experts on illumination, whether by gas or electricity, but also others—architects, consulting engineers, physicians, teachers, works managers—who can all make their influence felt and contribute to our decisions.

This, however, is only part of the story. The backbone of our membership is, naturally, associated with the lighting industry, and it is their attitude that has been decisive in establishing our position. It is part of the fine spirit and great traditions of our Society that whenever there is a task to be done our members and the firms that employ them are willing to forget their personal interests and predilections and to pool their efforts for the common good. This spirit was strikingly manifested when the Society was called upon to devise war-time street lighting and was engaged in other special war work involving applications of light. It was again the dominant factor leading to the success of our recent Convention. I do not believe that there is another Society in the world that gets better and more generous support from its members than our own.

A feature, since 1909, has been the development of illuminating engineering departments attached to firms in the lighting industry, so that to-day there exist many men with knowledge of illuminating engineering. There are also, of course, many others interested in lighting as part of their vocation. But the independent consultant expert on lighting is still hard to find, and for some time

to come specialised knowledge of illumination will probably continue to be found mainly amongst those in the service of the lighting industry. In these circumstances it seems premature to visualise the Society becoming an "Institution of Illuminating Engineers," nor is it by any means certain that it would gain thereby. We need not take too seriously the paradox that "the expert is always wrong," but his view is necessarily a somewhat narrow one and also sometimes self-interested, and he is not the person to advise on questions of policy. Constituted as it is at present the Society can speak with an authority higher than that of the expert—for it represents not only the expert but also the community that employs him and judges his efforts.

This is a question which we can leave time to decide, and there is another possibility—that there might grow up ultimately an "inner core" of experts who, whilst remaining members of the parent body, might form an organisation of their own, having in part the functions of a trade union—functions which the Companies Act, as one of the conditions of our incorporation, specifically denies to our Society. Simultaneously the Society might well achieve a broader conception of its field of work and a membership more widely distributed and possibly very much greater than at present.

I have sometimes been asked if it is possible for the Society to obtain a Charter. Only a few years ago this might have been regarded as quite visionary prospect. To-day the vision seems to have come appreciably nearer. I do believe, most strongly, however, that a claim in this respect is much more likely to be accepted if it rests on our present wide framework and on our record of public service, than if associated with an effort to establish professional status or privilege.

In the meantime there is one question that is urgently before us, the training of those entering the lighting industry and the granting of some "hall mark" by which the competent lighting engineer may be identified. The gaining of this recognition, title, or diploma (as a distinction and not a condition of membership) should prove of definite professional value. But it should be emphasised that such a scheme of training is only feasible if it receives the strong backing and practical co-operation of leading firms and undertakings in the industry, and—this is a crucial condition—if it is accepted as a definite avenue to employment.

Technical knowledge of his speciality, however, is only part of the education of the illuminating engineer, and only part of what the Society needs from its members. Our function is twofold, to acquire knowledge and to disseminate it. We all of us need, therefore, such a background to our technical knowledge that we shall not deserve the criticism—of which Dr. (now Sir Clifford) Paterson once warned us—"Light had they but no insight, illumination but no vision."

Such a background should be broad and general. It should not be purely scientific, for scientists, too, have their limitations. Their complaints of popular neglect of science often reveal their own inability to present its possibilities to the community.

Members of our Society, if they are to be able missionaries for the cause we have at heart, should have broad human interests. They should be "good mixers" foregoing the habit sometimes leniently described as bluntness, and bearing in mind the saying of William of Wykeham: "Manners maketh Man." By this I mean not merely ease of manner and grace of manner—though certainly these are valuable gifts—but rather that instinctive feeling which enables some people to express disagreement without giving offence and to correct without giving pain or causing humiliation; and, what is often hardest

but nevertheless often essential in our vocation, to listen patiently and sympathetically even when one is convinced that the person to whom one is speaking is completely mistaken! They should be equipped with general knowledge that enables them to meet on level terms members of other and older professions. I could name a number of our members who have this cultural background in a special degree. But if I were pressed for an example I think I should select our first president —Professor Silvanus P. Thompson, scientist, scholar, and musician, with a power of exposition and a grace of manner rarely met and always remembered.

In this connection I am reminded of a meeting called during the presidency of Mr. A. W. Beuttell—to whom we owe so many interesting ideas and stimulating suggestions—in which the future of the Society, and in particular its title, was discussed. We then decided to retain the description "The Illuminating Engineering Society." Now, after the lapse of so many years, the goodwill wrapped in the term is so great that in all probability we should be loath to change it.

Yet to my mind there is no gainsaying Mr. Beuttell's contention that the title is not entirely happy. It implies simply the distribution of light on objects and does not really cover many of our interests, such as the uses of light in the form of luminous signs and signals, and its applications for purposes of decoration and display. And it conveys an unfortunate impression—that we regard illumination as essentially "engineering," a matter of lamps, wiring, piping, or other paraphernalia, without regard to the really important consideration—the effect they produce.

Bearing in mind this weakness in our title we should take every opportunity of demonstrating how wide is the field we really cover and affirming our recognition that we need the aid of many who not only do not profess to be illuminating engineers—and this applies to some of our most valuable and eminent members—but are not engineers at all.

I have always regarded our Society as something quite distinct from purely scientific, technical or professional bodies. We have our own course to shape, which is not necessarily the same as that of others. There is, however, one Society (of which I am also a member) whose aims and constitution closely resemble our own—the Royal Horticultural Society. Like our own Society it exists largely to bring into contact the user and the producer. It admits to full membership anyone interested in the subject with which it deals and makes no discrimination between the professional expert and the user or amateur. All have equal privileges and status. It does, however—and here is a lesson for us—provide for those who desire some recognition of their technical skill by organising tests, including both a written examination and evidence of adequate practical experience, which are recognised by Government Departments and lead to the granting of a diploma, of considerable professional value.

That Society has a very large and varied membership—I understand approaching 27,000 in number. Its shows, held at fortnightly or shorter intervals during the season, are always crowded. It may be said that people are not interested in light as they are in flowers—but I believe that by proper methods we could make them so.

There is perhaps another hint to be derived from the experience of the Royal Horticultural Society. In 1904 that body celebrated its Centenary by taking possession of a home and exhibition hall of its own and at the same time taking over the delightful gardens at Wisley. The I.E.S. is a much younger body. Yet in the year 1959 it will be celebrating 50 years of existence. Is it too soon to begin planning for this event?

SESSIONAL MEETING IN LONDON

The opening meeting of the session took place at the School of Hygiene and Tropical Medicine (Keppel-street, London, W.C.1), on Tuesday, October 8, 1946, at 6 p.m.

The retiring president, Mr. H. C. Weston, being in the chair, called upon the new president, Mr. J. S. Dow, to deliver his presidential address, in the course of which he referred to the place of lighting amongst the arts and sciences and the influence of good lighting on production and safety, and as an amenity in daily life. Mr. Dow also referred to the work of the Society in the past, and expressed some views on the future, emphasising that by the intention of its founders and by the terms of its Articles it was a "cultural" Society—the highest description that a Society can covet.

A vote of thanks to the author was proposed by Dr. J. W. T. Walsh, who said that all members of the I.E.S. would join with him in thanking Mr. Dow, not only for his address, but for his services to the Society for so many years, during which time he has been regarded by members of long standing as the presiding genius in matters relating to illuminating engineering. Dr. Walsh spoke of Mr. Dow's work in conjunction with the late Leon Gaster, and paid tribute to the great work that he had carried out single-handed in connection with "Light and Lighting," which was held in respect by all lighting engineers throughout the world.

Mr. A. Cunnington, in seconding the vote of thanks, recalled his long association with Mr. Dow, to whose work the present position of the Society was so largely due. The vote of thanks was carried with acclamation.

Before vacating the chair Mr. Weston reviewed his own year of office as president, and said how much pleasure it had given him to hold that office during the year in which the Society had held its first Convention and Exhibition, whilst the growth in membership indicated the continued interest in the work of the Society. He expressed his thanks to the Officers, Council, committees, and to the staff at headquarters, who had given him such willing and able support, and paid particular tribute to Mr. Dow, who had rendered far greater help than he could expect to give to Mr. Dow himself during his coming year as president.

Mr. Dow then accepted the chair, and returned thanks for all the expressions of kindness he had received, and for the vote of thanks for his address. In calling for an expression of thanks to Mr. Weston for his services to the Society during the past year Mr. Dow reminded members of the work that Mr. Weston had carried out in connection with the I.E.S. Code and the Convention, and said that all members would agree with him that they were indeed fortunate and grateful that Mr. Weston should agree to return to office as the new honorary secretary.

The president then announced the award of the Leon Gaster Memorial Premium. The Council had agreed that on this occasion, as two papers of outstanding merit had been presented to the Society, a double award should be made, viz., to Dr. J. N. Aldington, for his paper entitled "Bright Light Sources," and to Mr. G. T. Winch, for his paper entitled "Photometry and Colorimetry of Fluorescent and Other Electric Discharge Lamps." Owing to the unavoidable absence of Dr. Aldington the award could only be made to Mr. Winch at the meeting, but congratulations were offered to both authors. This terminated the meeting.

ACTIVITIES OF CENTRES

Publication of Papers.

Secretaries of Centres and Groups are reminded that accounts of all meetings (in general not exceeding 250-500 words in length) should be sent to the Hon. Secretary at headquarters as soon as possible after events have taken place in order that a suitable reference may be made, either in the *Transactions* or *Light and Lighting*. Such accounts should contain particulars of the place, date and time of meeting, the title of the paper and the name of the author, and a brief summary of the paper and the ensuing discussion. When available a copy of the full text of the paper should also be furnished.

Attention is also drawn to the statement recently issued by the Papers Committee entitled "Contributions to the Transactions,"* in which it was specially requested that the committee be informed, through the Hon. Secretary, of any papers of outstanding merit which are regarded as being suitable for reading in London or for publication in the *Transactions*.

As members are aware, the paper restrictions still set severe limits to the size of the *Transactions* and the amount of matter that can be published. There has, however, been some recent improvement in this respect, of which full advantage will be taken.

The Evolution of Lighting.

The Birmingham Centre held its first meeting of the Session on October 11, when the new chairman, Mr. R. Mackenzie, presented his inaugural address entitled "The Evolution of Lighting." Having traced the advancement of light from the earliest times up to the modern fluorescent lamp, Mr. Mackenzie dealt at some length with the history of street lighting in the City of Birmingham. This is a subject on which he is particularly qualified to speak, having spent 45 years with the Corporation's street-lighting department which now has 44,000 lighting points illuminating the city streets.

Stage Illusion.

At the opening meeting of the Glasgow Centre on October 3, Mr. J. M. Henshaw took office as chairman. A talk, entitled "Stage Illusion," was given by Professor M. G. Say, which included an interesting historical survey of acting, actors, audiences and lighting from the time when candles were in use in theatres until the present day. With the aid of a model stage Professor Say demonstrated various colour effects and changes, illustrating how the illusion of space could be given. A full and interesting discussion followed.

*Trans. Illum. Eng. Soc. (London), 1946, XI, 70-71.

Presidential Visit to Bristol

The President has accepted an invitation to visit Bristol on Friday, November 1, when a luncheon has been arranged by the Bath and Bristol Centre, to take place at the Grand Hotel. It is anticipated that the Lord Mayor of Bristol and prominent local members of the architectural and other kindred professions will attend. A miniature exhibition, illustrating the work of the Society and lighting developments generally, will be open to inspection during the afternoon, and a meeting, at which the President will deliver his address, will take place in the evening (7.30 p.m.).

Additions to List of Members

The following applicants have been duly elected by the Council to membership in the Society, and their names have been added to the list of members:—

CORPORATE MEMBERS:—

Ashworth, J. B. .....“Ferndale,” Yew Tree Drive, BLACKBURN.
Blewitt, A. .....20, Linden Avenue, STIRLING.
Capel, R. A. .....28, Sunnybank Avenue, BIRMINGHAM, 22C.
Chisholm, C. J. .....The Corporation of Greenock, Public Lighting Dept., 3, Jamaica Street, GREENOCK.
Collard, L. A. .....74, Hulse Avenue, Barking, ESSEX.
Collinson, H. G. .....13, Glenholm Road, Baildon, YORKS.
Commercial, L. G. ...24, Neuchatel Road, Catford, LONDON, S.E.6.
Cook, W. L. .....51, Old Park Avenue, Enfield, MIDDLESEX.
Ferris, E. C. .....215, Deykin Avenue, Witton, BIRMINGHAM, 6.
Fickling, L. A. .....43, Woodstone Avenue, Ewell, SURREY.
Harrison-Watson, J. 9, Corkran Road, Surbiton, SURREY.
Hayes, J. A. .....38, Wanlip Lane, Birstall, LEICESTER.
Hopton, C. B. .....19, Brunswick Square, GLOUCESTER.
Horder, C. F. .....133, Wigan Lane, Wigan, LANCS.
Hyde, C. .....“Willowbrook,” Ash Bank, Bucknall, STOKE-ON-TRENT.
Jones, J. P. .....1, Garth Road, Trealaw, Rhondda, GLAM.
Kimber, W. A. .....39, Pickhurst Rise, West Wickham, KENT.
Long, T. C. .....Armature and Electrical Repairs, Ltd., St. Stephen's Road, NEWPORT, MON.
Newburn, E. A. ...City Electricity Dept., Old Bridge, BATH.
Ormerod, R. W. W. 30, Maidstone Road, LONDON, N.11.
Randall, W. H. .....21, Oakfield Drive, Rednal, WORCS.
Raybould, S. .....83, Brandhall Road, Warley, Oldbury, nr. BIRMINGHAM.
Ritchie, H. D. .....140, Cathedral Road, CARDIFF.
Satchwell, H. S. .....43, Featherstone Road, King's Heath, BIRMINGHAM, 14.
Seward, W. G. .....6, Piercefield Place, CARDIFF.
Short, G. L. .....13, Hawthorne Road, King's Norton, BIRMINGHAM, 30.
Thomas, G. E. .....Cowan Brae, 6, Grove Road, Lydney, GLOS.
Webb, R. A. .....44, Holmdene Avenue, LONDON, S.E.24.
Willdey, R. C. .....21, Cambridge Road, BIRMINGHAM, 14.

COUNTRY MEMBERS:—

Van Dijk, R. .....Pelikaanlaan, 4, Eindhoven, HOLLAND.

STUDENT MEMBERS:—

Colsell, G. E. .....26, Westcroft Square, LONDON, W.6.

SESSION 1946—1947

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Chairman: H. W. Harris. *Committee:* D. H. Fox, T. C. Holdsworth, A. J. Holland, H. B. Leighton, B. C. Ossitt, E. C. N. Taylor. *Hon. Secretary:* E. Smith, 28, St. Paul's Street, Leeds, 1.

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EDINBURGH CENTRE (SCOTTISH AREA).

Chairman: J. B. Mackenzie. *Vice-Chairman:* M. G. Say. *Hon. Treasurer:* G. E. L. Comrie. *Committee:* C. N. Kemp, J. E. Lamb, W. Mackenzie, D. D. Melvin, G. Reid, H. Stanway. *Hon. Secretary:* S. G. Batt, 8, George Street, Edinburgh.